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WHEN interviewed between platefuls, this 11-months-old young man emphatically stated: "I have been brought up on Pablum and still like it, but some days when I'm in the mood for oatmeal, nothing satisfies me like Pabena!"

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THE JOURNAL OF SCHOOL HEALTH

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Vol. XIII OCTOBER, 1943 No. 8

BREAKFAST IN THE CLASSROOM—AN EXPERIMENT IN NUTRITION EDUCATION AT THE ELEMENTARY LEVEL*

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MILDRED H. KEARNS, *Teacher.*
SARAH GRANT ALLEN,
Nurse at the Child Health Laboratory.

Our scientific knowledge of nutrition has increased enormously since World War I, but this knowledge per se has not abolished malnutrition. Examination of draftees in World War II revealed a large proportion of physical defects as in World War I and many of these defects are attributable to faulty diet. Widespread dietary studies had already warned us that many of the families in our "land of plenty" were not adequately fed. Evaluations of the nutritional status of groups of the population showed physical evidence of poor diet. At the present time, because of the need for a "strong America," interest is focused on these problems of malnutrition.

Why has there been such a lag between the acquiring of scientific knowledge of nutrition facts and their application in the lives of our people? A number of factors have interfered with the translation of nutrition facts into terms of good diets for all. Poverty has prevented some families from buying nutritious foods although nutritionally informed families who use their information secure adequate diets at a very small cost. Lack of nutrition information is frequently a stumbling block in the way of good food selection. Another obstacle to good diet selection is lack of interest in applying nutrition information. Individuals with established food habits frequently fail to alter poor diet habits even though they learn the facts of nutrition.

In the light of these findings, the elementary school is seen as

* This work was carried out under the auspices and direction of the several Departments of the Woman's College of the University of North Carolina, in cooperation with the Greensboro Health Department, Greensboro Schools, North Carolina School-Health Coordinating Service, and the General Education Board.

a fertile field for nutrition education. During these early years, habits are forming, and we may develop good food habits by "learning and doing" at this time. It is easier to form good habits than to reform bad ones.

Moreover, malnutrition strikes severely in the early growth period and may leave lasting scars.

It is the belief of many, nutritionists and educators alike, that nutrition teaching should begin in the first grade. In any case, teachers in the lower grades are exploring and should continue to explore the possibilities of nutrition education for the young child. Teachers of Home Economics and nutritionists as well as others trained in nutrition may offer advice and guidance in technical matters to aid the unitiated elementary classroom teacher. Only with the cooperation of the two groups, those trained in elementary teaching and those trained in nutrition, can really effective nutrition teaching in the early years be accomplished. This study is one of a series of experimental studies in nutrition education at the elementary level designed to help the elementary teacher with her malnourished children, which have this year been a project of the Child Health Laboratory, located in a regular classroom in the Curry Demonstration School of the Woman's College.

Approximately 15 to 20 children with health needs, selected by the Laboratory nurse from one grade of the Greensboro elementary schools, attend the laboratory for a period of six to nine weeks. On entrance, each child is given a thorough physical and medical examination with assessment of nutritional status; special tests are conducted. These examinations and tests are carried out by the College physicians and members of the College departments of Home Economics, Physical Education, and Science. A complete mental and personality evaluation is made by the Psychology Department.

Believing that a health program must be built on successes, not failures, and that the old saying, "Every day in every way, we are getting better and better," embodies good child psychology in health, a therapeutic program is initiated. This includes improved diet, rest, and corrective exercises for postural defects which have been determined in the orthopedic examination.

In the Child Health Laboratory, problems are set up and studied by the elementary teacher, a member of the Home Economics Department at Woman's College, and the Laboratory nurse who makes most of the home visits and is well informed on the family situation. One of the problems studied was the preparation of

breakfast in the classroom by the children. It was known that the majority of the children coming to the Laboratory did not have a breakfast at home and those who had breakfast often did not have an adequate one. The importance of a good breakfast is recognized by nutritionists. During the growth period a constant and abundant supply of energy is urgent. The time elapsing between the evening and the noon meal is a long period of abstinence for any individual and particularly for a young child. Moreover, if food is not eaten in the morning, it is unlikely that the child will get his full quota of minerals and vitamins for the day. Several studies indicate the gain in mental concentration and efficiency in the pre-lunch hours which comes with an adequate breakfast.

Thus appreciating the urgent need for a morning meal, it was decided to discover whether it was practical to prepare breakfast in the classroom. Answers to the following questions among others were sought: Can the elementary classroom teacher give to those who need it a breakfast in the classroom? What educational, as well as health benefits, can be derived by pupils, both under- and well-nourished? What are some ways of motivation? What reading materials adapt themselves to the problem? How can number work be introduced in connection with the problem? How can other phases of health education be related to the nutritional problem? How can group planning and sharing, division of labor and individual responsibility be encouraged? On different age levels, what effective pupil participation can be expected? What foods best serve the purpose? What equipment is necessary and practical? Can this be a means of helping the family to adapt and supplement its present food pattern for the best health of the child?

The Child Health Laboratory had money on hand which could be used to buy equipment and food, and use was made both of "surplus" foods or "seasonal abundances," and of food brought from home by the children. But an elementary teacher could obtain food and/or money for the purpose through several avenues. Some possibilities include: interested Parent-Teacher Organizations or local merchants or farmers interested in the project if means were not available in the school itself for the undertaking; or certain agencies, governmental and other, could be approached which might give aid to such a program. With careful planning by the teacher not much aid is necessary to foster the project.

Very simple equipment sufficed for the experiment. A small hot plate, a double boiler, and a long handled spoon were the pieces of essential cooking equipment. Bowls, spoons, and glasses were

used for serving the breakfast. In an ordinary classroom situation, each child might bring an old spoon and cup from home or if money were available for the purpose, paper spoons and cups could be utilized. In the Laboratory, a small kitchen nook was set up in an alcove corner of the classroom containing a small flat-topped table which the pupils helped to cover with oilcloth, and a few oilcloth-covered shelves to hold the necessary equipment and the stored food.

Breakfast consisted of a fruit or fruit juice, a hot whole grain cereal, and milk. Sometimes the children also had bread with molasses. Sometimes raisins or prunes were added to the cereal. This breakfast, though unpretentious, furnished an appreciable proportion of the day's body-building needs of the children.

Duties were allocated to the children weekly in turn. Two children were appointed as cooks for the week and took charge of the actual cooking of the cereal under the teacher's supervision. Many of the children took their "chef" duties with a praiseworthy seriousness, and came early to put the water on to boil so that the cereal would be cooked when the others arrived. Other tasks assigned including "setting the table" or getting out the milk or fruit. Almost without exception the children coming to the Laboratory ate their breakfast with enthusiasm. No child was urged to eat, but it was suggested that he taste each food. If he said that he disliked a food at first, it was not long before he was following the example of the other children and cleaning up his bowl. Most of the children came back for second servings of cereal each morning. In a fourth grade group, one child ate no breakfast one morning. Later in the morning he was not able to take part in the play on the playground and was told by the other boys and girls that "you got weak because you didn't eat breakfast." The child ate breakfast thereafter.

The breakfast preparation presented many opportunities for education in life situations. The children learned the importance of washing their hands before touching food or eating. As the children ate together in the classroom, there was opportunity for discussion of table manners. Counting out the number of spoons or bowls or servings of food required gave opportunity for number work to the younger children. Some of the older ones computed the cost of a serving of each cereal served. Reading was done on cereals and where they are found.

The children were weighed each week and kept growth charts. The eating of a good breakfast was linked by the teacher to the gain in weight observed after a week or more at the Laboratory.

Explanations given were dependent to a large extent on the grade level and on the interest of the children.

There is no advantage in teaching the technical terms of nutrition in the lower grades; there the emphasis should be on becoming familiar with common nutritious foods and on the development of good eating habits. First, second, or third grade children can learn the words "calcium," "Vitamin A," and so on, but these terms are meaningless to them. Why tarnish the subject matter of nutrition for these children who will study it and fully comprehend it later when they are older?

Learning to eat new foods, working with foods, and growing foods are activities well suited to the younger children. These young children are quite capable in a kitchen in most cases! And how important it makes a child feel to help prepare a meal! He becomes more interested in eating any food served if he has had a hand in its preparation. Often, for example, a child who had persistently refused oatmeal or another breakfast cereal would eat eagerly after he had helped prepare it.

One project greatly enjoyed by third and fourth graders was the making of some cereal and some flour of "their own" by grinding whole wheat. They observed the different parts of the grain and saw the difference between whole wheat projects and white ones. This project is described in "Our Cereals."[1] They enjoyed cooking some of the cereal that they had ground for breakfast. The cereal was cooked the afternoon before being used, the top covered with water, and the cereal heated without stirring in the morning. As soon as it was heated, the cereal was stirred and then served.

Experiments with animals proved effective in showing children in the third grade and above that "food does make a difference." Children love pets and the use of animal experiments are a graphic means of illustrating important facts about foods to older elementary children. It is essential, however, from a psychological viewpoint, that the experiments be controlled in such a way that the animals on the poor diet do not become really sick. The children can readily see the differences in weight-gain, in appearance, in posture, and in "pep" between animals fed an adequate diet and those given a less adequate one over a short period of time. White rats were used in one experiment; one pair was fed white grits with milk, while another pair was fed the grits and milk plus a whole grain cereal. It is needless to say which pair showed the

1. Rose, M. S., and Bosley, B. *Our Cereals.* Bureau of Publications, Teachers College, Columbia University.

greater gain. In another experiment, one pair of rats was given exactly what the children had for breakfast each day, while another pair was given cornflakes and coffee or tea.

After the children had learned how to cook the different cereals served, including cracked wheat cereal, wheat hearts purchased at a local mill, and oatmeal, and had developed an appreciation of the importance of breakfast in the growing process, samples of cereal were taken home by each child. Next morning a cereal was cooked and served to his brothers and sisters by the child. This was found to be an effective means of establishing the breakfast habit in some of the homes, as well as improving the quality of breakfast served in others.

Fortunately for all of us, whole grain cereals are not likely to be rationed. Therefore, at present emphasis can well be placed on the eating of a hot whole grain cereal which supplies a number of the things our bodies need each morning. Elementary children should be forming the breakfast habit, with a hot whole grain cereal as the mainstay, in these days of rationing and scarcities.

* * * * *

Demand For Dental Hygienists,—With the demand for dental hygienists at a level "little short of overwhelming," according to the American Dental Hygienists Association, information about the duties of the occupation and the requirements for filling it, have been submitted to the Bulletin to the Schools for transmittal to guidance personnel, teachers and others in the school system of the State for possible use among pupils.

Dental hygiene is a profession for women. It has only 7,000 trained women throughout the United States who are in active practice. The association states that the demands for employment have always exceeded the supply and that salary and working conditions are ideal.

The dental hygienist is described primarily as an educator who uses dental prophylaxis as a means to instill in her patients the importance of home care of the mouth. From being at first a helper to a dentist, the dental hygienist has now found a wide field in schools as a special teacher and in industry in dental departments.

Dental hygienists in the Army receive from $1640 to $1970 a year. In the Navy, they are members of the WAVES and receive the rating of a specialist with the rank of pharmacist's mate.—From: Bulletin to the Schools, The University of the State of New York, September 1943, p. 28.

THE PROGRAM OF THE CHILD HEALTH LABORATORY AT WOMAN'S COLLEGE*

SARAH GRANT ALLEN, *Laboratory Nurse*
MILDRED H. KEARNS, *Laboratory Teacher*
ORREA F. PYE, *Professor of Home Economics*

From Child Health Conferences held each summer since 1941 at the Woman's College of the University of North Carolina has stemmed a year-round project known as the Child Health Laboratory. A regular classroom in Curry Demonstration School houses the Child Health Laboratory, which is under the direction of the head of the Department of Education at Woman's College.

The active administration of the Laboratory is vested in the policy committee, which is composed of the heads of the departments of Health, Education, Home Economics, and Physical Education, as well as the Curry School principal, the classroom teacher, and the laboratory nurse. One of the first concerns of this committee was to establish certain criteria for the selection of pupils suitable for Laboratory study. Keeping in mind the avowed purpose of the project, to assist the classroom teacher in isolating and meeting child health needs, the pupils are selected on the three-fold basis of (1) malnutrition, (2) pre-disposition to disease, and (3) functional disorders. The cases studied in the Laboratory are the typical ones often met by the elementary school teacher.

The primary aims of the Health Laboratory are: the initiation of a health regimen for each child based on thorough examination and diagnosis with a three-year follow-up program in the school and in the home; and experimental studies in nutrition and other phases of health education at the elementary level to work out practical suggestions for the teacher in dealing with her child-health problems.

Perhaps a more specific cross section of the types of cases studied will clarify the criteria for selection of pupils. *Malnutrition* is the commonest difficulty. Such cases constitute a large percentage of the total. *Seasonal colds* are probably next in incidence and in such cases the teacher should know what to suspect and be

* This work was carried out under the auspices and direction of the several Departments of the Woman's College of the University of North Carolina in cooperation with the Greensboro Health Department, Greensboro Schools, North Carolina School-Health Coordinating Service and the General Education Board.

possessed of certain simple techniques that might reveal the cause. *Perennial colds* are quite a problem in many localities and among the underprivileged group generally. Cases of *poor posture* can often be helped by proper motivation plus therapeutic exercises. Many cases of *poor coordinations* can be helpful materially by a regimen of exercises. Cases of *marked nervous tension* often surrender to simple psychophysical treatment. As for *mild spastics*, the teacher alone should not attempt treatment. She should recognize such cases and have the special background needed to cooperate effectively with the physician. *Tics*, or muscular twitchings, are usually psychological problems. The teacher should be aware of *thyroid cases* so she may refer them to the proper authorities. The teacher should recognize such cases as *rheumatic fever* and cooperate with the physician through a knowledge of the proper regimen for these children. *Tuberculosis* cannot be overlooked as a possibility in childhood, and certainly the teacher should be familiar with her part of the program for such children. Since *anemia* is particularly prevalent among pupils from low-income families, such cases should be observed by the teacher and treated in full cooperation with the physician.

Keeping in mind the above principles for selection, the Laboratory nurse visits the elementary schools and observes the children at work and play. In addition, she examines each child in a designated grade, all the while on the alert for health defects which can be either corrected or materially benefited by the remedial program offered in the Health Center. With the aid of recommendations made by the school principal, the grade teacher, and the school nurse, and her own observations, the Laboratory nurse selects approximately fifteen to twenty children from one grade level of the various Greensboro Elementary Schools to come to the Laboratory for a period of six to nine weeks.

With the selection made, it is then the duty of the Laboratory nurse to visit the several homes individually, obtaining parental permission for the study of the child and observing home conditions contributing to the child's particular problem. A thorough medical and sociological survey of the family background is made and a history concerning the child's habits and development is obtained. The child is then ready to become an integral part of the Health Laboratory.

Determining the health status of each child involves weighing and measuring, testing visual and auditory acuity, estimating nutritional adequacy, and determining cardiac function and disease

susceptibility, and is primarily the responsibility of the medical examiner. Still a comprehension of their nature and scope should be gained by the teacher.

In the diagnosis of the child's problem and the initiation of a health regimen, many members of the Woman's College faculty participate. Each child is given a thorough physical examination by the college physicians, while special physical tests are conducted by members of the Science Department. A member of the Home Economics Department makes an evaluation of nutritional status by means of various tests and measurements, and a Physical Education staff member makes a complete orthopedic examination. The Psychology Department conducts a comprehensive study of the personality and mental ability of each child.

Realizing that "the health examination is essentially an effort in health education to establish suitable attitudes in the child and his parents and to act as a motivating force for healthful activity" the parents are urged to be present for this examination. In working with the parents, the chief concern is to help them think constructively about their own situations and to solve their every day difficulties. The Laboratory nurse makes home visits to interpret to the parents the physician's findings as well as the findings of the other departments which have been summarized, and a recommended health regimen set up for each child. Family cooperation in putting the recommendations into effect is encouraged by the nurse on her home visits. Majors in the Sociology Department assist in this follow-up program.

During his stay in the Laboratory, the child has two nutritionally adequate meals daily—breakfast and lunch. Attention is given not only to his food habits at school but also at home, as well as help and guidance for the improvement of the entire family's habits. In her home visits, the Laboratory nurse tries to give helpful advice to the family when help is needed, in spending their food money. She teaches them the rudiments of nutrition and gives recipes for low cost nutrition and tasty dishes.

The children prepare their own breakfast in the classroom under the teacher's direction and prepare also foods which supplement sandwiches brought from home. In this way the children become familiar with many wholesome nutritious, though inexpensive foods, and many situations arise for health teaching of a practical yet dynamic character. There is carry-over into the home by this means as the children take home recipes and suggestions, and learn to help in the preparation of meals in the home.

The academic work of the Health Laboratory is at the grade level of the children concerned. Much correlation with the health teaching of reading, writing, arithmetic, geography, art and music was found possible. For example, the children are weighed to follow their weekly gain, and keep graphs of their progress.

The child rests, and frequently sleeps, one hour daily; supervised play in the yard, and corrective posture exercises are a part of the daily routines.

Data and recommendations are sent to the school regularly attended by the child to supplement records on file there. Conferences are held with the classroom teacher to discuss the child and his problems, and to pool knowledge of the child for mutual enlightenment.

Following one of our vital statistics through his period at Health Center, he is found to have gained in weight, improved his eating habits, his posture, and his powers of relaxation, and to have started on his road to happiness by becoming health-conscious.

When six months have elapsed since the child left the Health Center, the Laboratory nurse brings him back for a physical reexamination and check-up. Usually the youngster is found to have made appreciable physical improvements. Many times the parents have obtained dental care for the child whose teeth had previously been uncared for or obtained medical care for conditions previously neglected. Gain in stature and weight reflect improved habits of eating and rest. A better carriage reflects a greater muscular strength and an increased awareness that one should "stand tall" and look well.

* * * * *

First Aid for Fractured Spine,—Some difference of opinion has been expressed as to whether a person suspected to be suffering from fracture of the spine should be carried in the prone position. The question of first aid in such cases has been submitted to the British Orthopedic Association. After discussion at the last meeting the following opinion was given: "The executive committee decided to give authoritative support to the view that patients with suspected spinal fracture should be shifted and moved in such a way as not to be folded either backward or forward. The patient should be disturbed as little as possible, being transported as he lies. From the point of view of the spinal injury we are of the opinion that there is no indication for change of position from face to back or vice versa." —Journ. A. M. A., Oct. 2, 1943, p. 299.

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EDITORIAL

Superstition or science: which of these rules our daily lives?

The measurement of civilization in any given era is the measurement of the relative potency of these two forces. As man improves in intelligence and true knowledge the "medicine man" with his charms and incantations, his "casting out of devils" tends to disappear although we still have some of them with us. The savage, whether ancient, medieval or modern lives in a world of phantasy. His opinions are fixed—so fixed that he resents any dissent and may resent it by force. He tends to ostracize any who differ with his ideas. These superstitious ones tend to hinder progress, whether social, religious, or scientific.

The idea that disease, especially epidemics, were inflictions sent to man as punishments for ethical sin died hard. To be sure they were punishments, but for sanitary or scientific sin, not for ethical or religious sin.

The invention and use of the microscope permitted thinking men, oftentimes, actually to see the true causes of disease, and the old idea of disease visitation as punishment for sin began to fade, although we still have those in our midst who maintain that disease is a matter of thought rather than of visually demonstrable bacteria. Even yet, we have elements in our population who maintain that tuberculosis is spread by "night air". Most of us care

little what these ignorant ones believe, but when they practice their false beliefs by trying to keep night air out of the bed chamber, they endanger themselves and others. After dark the only air there is is "night air".

Malaria falls in the same category but with a bit more reason, since the malaria carrying mosquito is largely a night flyer. This idea has become fixed in the name of the disease—malaria, bad air.

Rheumatism is in a cloud of superstitions both as to the multiplicity of ailments that are dubbed "rheumatism" and as to the causes, preventions and treatments of the disease. Perhaps the most prevalent superstition concerning this disease is the idea that carrying a horse chestnut in the pocket will cure the disease or at the least ameliorate the symptoms. Is it perhaps because the disease is so prevalent there that the superstition seems most firmly ingrained in those sections where this nut is known as the "buckeye".

The virus diseases, because—for many years after bacteria were discovered and some of them proven to be guilty of causing disease—the virus was invisible through the microscope then in use, have been peculiarly loaded with superstitions. It was common practice when the not rare epidemics of yellow fever hit our own southland for the authorities to fire salvos from cannon to "dispel the miasm". Since mosquitoes are not terrorized by cannon shots this was a waste of energy, as well as an exhibition of ignorance.

Apparently our scientists are close to proving exactly what a virus is.* When they do, another refuge of the ignorant and superstitious will have been destroyed. Speed the day! C. H. K.

*See page 206 of this issue.

ABSTRACTS

The Integration of School Nursing in the Education Program. A generalized plan of public health nursing is a program in which one public health nurse is assigned a certain district in which she is responsible for all the nursing work, supervision of communicable disease which includes tuberculosis and syphilis and gonorrhea; prenatal hygiene; hygiene of infants and pre-school children and school children. In the beginning nurses were employed by schools in an effort to improve attendance. A little later the nurse's effort was directed toward improving the health of the children so that they could do better school work and then school physicians were needed for physical examinations. It became evident that the nurse alone could not carry through effectively the physician's recommendations and it developed that the home, the school, and the community, with the public health nurse as the coordinating influence, were all necessary to the provision of conditions that would foster the best child development.

In the county which the author represents there is a unique working relationship between the health and school departments. The County Health Department with all its workers, physicians, nurses, dentist, bacteriologist, and sanitary inspectors, is the school health department; its administrative head, the county health officer whose prime interest in all department service is the learning which results. We recognize our responsibility for teaching when we supervise a case of communicable disease. When such a case is released from isolation it is possible that all of the following bits of teaching, and conceivably many more not directly associated with the illness, have been accomplished:

1. Germs are spread by droplets of moisture from the nose and throat of the infected person.
2. Immaculate cleanliness, sunshine, and fresh air are powerful deterrents to the life and activity of germs.
3. Hands contaminated with fresh material carrying germs can be effectively cleaned with soap and water.
4. Isolation of the afflicted person in one room will help to keep the rest of the family safe from infection.
5. It is good citizenship when a family has an infected member to so conduct its internal affairs and its comings and goings that no other family becomes infected.
6. All other families exposed learn the presence in the community of the risk to their health and learn the important facts about the symptoms of the disease and exactly how they may help to prevent its spread.

This is accomplished by demonstration of procedures in the sick room—the care of used paper handkerchiefs; the care of used bed linen and sleeping garments; the serving of food and the care of left-overs and dishes; the choice and care of books and toys; and by the worker's expression of appreciation for the help given by the patient and his family in helping to prevent the further spread of the disease, the idea of good citizenship is developed. Mimeographed notes are sent to non-immune, exposed families.

We recognize teaching for health in the conduct of a child health conference which is manned by a well-qualified pediatrician, at least one public health nurse, and a volunteer worker from the community. Direct teaching is given in the discussion of growth and personality development; protection against communicable disease; nutrition and general good hygienic care. Indirect teaching is carried out by treating children, however small, as self-respecting individuals and recognizing each indication they give of being able to carry responsibility—to stand up to the wall for measuring height; to step up on the scales with no more help than a guiding hand can give; to put their own coats on a hanger; to take off and put on their own clothes; to solve their own small problems in their play with other little children; to speak for themselves when a question is put; and always to laugh *with* children but never *at* them. Mothers are taught that these things are important for the development of both physical and emotional health. Simple home-provided playthings with which children can do something suggest to parents excellent ways within their means for providing for the growth that comes through play.

"Responsibility for progress in the health teaching program rests primarily with the teacher," and some of the definite things for her to do in fulfilling this philosophy are set forth in the Santa Barbara County Manual of Information for Elementary Schools.[1] But every public health nurse who serves children of school age in any way has the responsibility for so performing her duties that the children served grow in ability to form good judgments where personal and community health are concerned.

When the public health nurse believes that the most important end in view in the perennial weighing and measuring in school may be its value as one additional factor toward the child's growth of respect for and understanding of the structure and functioning of the human body, she will encourage the plan for delegating this share of the program to the children themselves when they can be

1. Manual of Information, Santa Barbara County Elementary Schools, July 1, 1939, p. 37.

taught to do it with accuracy. A committee of children can use the light meter to determine the best place in school for testing visual acuity and can measure off the twenty-foot distance for the test. On days when hearing testing is to be done, another committee of children can undertake the job of providing a sufficient reduction of ordinary noise to make the test successful.

For an early diagnosis of tuberculosis campaign in a secondary school, teachers checked the knowledge of the students with an objective test on the subject. The public health nurse was called in to answer questions and to furnish additional information. The daring part of the program was the departure from the time-honored scheme to "Take this letter home and get your mother's signature." Instead, "If you wish to have the tuberculin test, come into my office and get a blank for your parent's approval," brought excellent results.

"The physical examination of school children by a school physician is health education experience of major importance."[2] The physical examination has greater significance for a child if he knows beforehand just what is to be done and why.

One public health nurse solved the preparation for examination problem in an eighth grade by arranging for the school physician to examine before the class a small boy from the kindergarten. Each step of the examination was explained by the physician and the result was that the eighth grade as a group anticipated an interesting experience when it should come their turn to be examined.

The public health nurse has great responsibility for impressing upon teachers the usefulness of the information yielded by the examination.

It will be the parent's privilege to carry through most of the physician's recommendations; but if the teacher knows what has been advised, she may often give much help in encouraging a parent to undertake whatever has been prescribed. Also, quite likely it may be the teacher who discovers that the real difficulty in the failure to secure correction of vision is the child's dread of wearing glasses, and it may be the teacher who can supply the magic word that will turn the trick. The nurse more than any other member of the school or health department staffs has an incomparable opportunity to know what home influences are affecting children, and these things finely sensed and accurately reported in school councils have found an important place in the data collected and put to use for the child's advantage.

2. C. Morley Sellery, School Physical Examinations, California and Western Medicine, Vol. 50, No. 1, p. 6.

I can think of many advantages to good personality growth which might accrue to the members of a class that at the very beginning of a school year plans together for the problems of community life which are sure to arise. As members of the school community they will have to deal with problems of heating, ventilation, lighting, school lunches, adjustments of seating to fit various sized bodies, good housekeeping, good grooming, prevention of colds and other communicable disease, understanding of differences in ability, tolerance for differences of opinion, mutual helpfulness, and general good citizenship. If it is the public health nurse who first becomes conscious of these opportunities for teaching, then it is her duty to guide the teachers with whom she associates along the same lines of thought.

Success will come at different rates of speed in different schools and it is honest for the public health nurse to begin by making the greatest effort with the teacher who first glimpses for the children the potentialities for widening horizons which lie in the public health nurse's special field of interest and activity. There are sure to be discouragements and these can quite easily be the result of a busy worker's failure to take the time necessary to carry the teacher along with her in her thinking. It is as true for the teacher and the nurse as it is for the children that wholehearted interest in a project can be kindled like fire if only one worker's belief in it is keen and the subject presented with its educational implications made clear.—By Helen L. Woodworth, Stana Barbara County Health Department Journal of Health and Physical Education, March, 1943. Briefed by G. E. C. Abstracted by Gertrude E. Cromwell, R. N.

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Treatment of Impetigo.—Pijoan and his collaborators employed a water soluble plastic (methyl cellulose, methocel) and sulfadiazine preparations for bacteriostatic plastic films. The scabs were cleansed with cotton soaked in hydrogen peroxide. As much as possible of the scab was removed without unnecessary trauma to the infected skin area. While the surface was still moist, tincture of sulfadiazine-methocel (solution 1) was applied with a cotton applicator. This may be repeated several times until the entire lesion or area is thoroughly impregnated. Sulfadiazine-methocel jelly (solution II) was then applied to the entire area. The coating should be approximately 0.5 mm. in thickness. It will dry within three to five minutes and will form a new film over the lesion. One treatment is usually satisfactory. Bacteriologic studies revealed that the impetigo lesions were caused by staphylococci. Bacteriologic counts

were done on 0.1 cc. of a twenty-four hour broth culture by the plate colony counting system. The results showed characteristic observations including the extremes of pretreatment counts. The more complete the debridement, the more satisfactory were the results. The debridement should be a cautious procedure, as trauma might induce scar formation with possible disfigurement. All lesions showed approximately the same diminution of bacteria. —Treatment of Impetigo Contagrosa with Sulfadiazine—Plastic Preparations and Exclusion of Dressings. M. Pijoan, F. Norman and J. Pijoan from Jour. A. M. A., Sept. 11, 1943, p. 118.

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Preschool Child Mortality,—One of the best tests of success in maintaining the health of the public is child mortality. During the greater part of the nineteenth century it was frequently stated that more than half the deaths in any community were those of children under five years of age. Even at the beginning of the present century "the death rate for the one to four-year age group was 19.8 per thousand children,"[1] but by 1940 this rate had fallen to 2.9, or one-ninth of the rate forty years previously. Not only do a much larger percentage of children born reach the age of four, but the increase in life expectancy indicates that "the preschool child of today will probably live, on the average, about six or seven years longer than the preschool child of forty years ago."

There are still sharp racial differences in child mortality so that "in general the life expectancy of the non-white child is about ten years less than for white children of the same sex." There are also significant sectional differences, varying from a rate of 4.9 per thousand in the West South Central states to 1.9 in Minnesota, Iowa and Wisconsin. Cities of over 100,000 show a uniformly lower death rate than the smaller cities and rural districts, a condition which is accredited to "the opportunities of generally better and more nearly adequate facilities for medical care in the cities. The specific immunization to some of the more important childhood diseases is of particular importance in this connection."

Certain of the diseases most deadly to children in 1900 have shown significant declines in importance. While influenza and pneumonia, diarrhea, enteritis and tuberculosis are still important as causes of death among children, the toll of these diseases has been decreased to a fraction of what it was forty years ago, while accidents now rank second as the cause of fatalities. As abstracted in the Journal of the American Medical Association, June 19, 1943, page 550.

1. The Preschool Child, Bureau of Census, Vital Statistics, Mortality Summary, February 19, 1943.

Deaths of School Children,—The death rate during the school age (5-14) is less than at any other age period and has declined almost 75 per cent during the present century, according to a special report of the Bureau of Census, April 13, 1943. In 1900 the rate was 3.9 and in 1940 1.0 per thousand in the registration area, which was expanding during that period to include several states with a higher than average mortality.

The decline would have been far larger had it not been for the great increase in accidental deaths and especially those from motor vehicles, which were almost non-existent in 1900 but which had become the most important cause of accidental mortality in 1940. There is, however, some reason for encouragement in the fact that since the national program for safety education in the schools was inaugurated in 1922 there has been a decline of 15 per cent in motor accidents to school children.

The leading causes of death for this age group in 1940 were:

Accidents	28.8 per cent
Influenza and Pneumonia	9.0 per cent
Disease of the Heart	8.0 per cent
Appendicitis	8.0 per cent
Tuberculosis	5.5 per cent**

The greatest reduction was in the diphtheria death rate, which ranked first in 1900 with a rate of 69.7 per hundred thousand but by 1940 had dropped in rank order to the twelfth place with a rate of 1.7 per hundred thousand. "This decrease of 97.5 per cent in the diphtheria rate," says the report, "may well be considered one of the greatest triumphs in the control of communicable diseases by the concerted application of preventive and therapeutic measures."

Rheumatic fever throws a growing shadow on the picture. It seems to be increasing in frequency and, while it "has a low fatality rate at the first attack," it often "produces permanent handicaps and has a high fatality rate for its recurring attacks." However, life expectation for the "School age child was about five or six years longer in the fourth decade of this century (1930-1939) than in the first decade. Journal of the American Medical Association, June 5, 1943, page 386. **Editor's note—ranks seventh for all ages.

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Ultraviolet Irradiation on School Children,—To the Editor:—I seek an opinion as to the therapeutic value to be had by exposing the naked bodies of school pupils, who are found on examination to be undernourished, to ultraviolet rays. At this special school for

the malnourished pupils it is the practice to afford such lamp (Hanovia) treatment to pupils for a period each day. While it is not a residential school, the pupils are furnished a warm, light form of nourishment on arrival and a full meal at noon. Pupils are also afforded a rest period on cots, medical and nursing supervision and menus prepared by a nutritionist. The pupil time necessary for all that is furnished for improvement of health is looked on with jealousy by those who have the responsibility for instruction in the traditional elementary subjects, so that they are asking for a cut in that now used for developing health, which was the prime object of this special school. Education of those physically handicapped is our responsibility. Naturally I wish to cooperate but hesitate to advise discontinuance of the lamp treatment without more information.—George J. Holmes, M.D., Newark, N. J.

ANSWER: The most important and the most thoroughly demonstrated effects of ultraviolet irradiation of the exposed body are those relating to the phosphorus and calcium metabolism. Rickets and tetany in infancy and early childhood and the vitamin D deficiency type of osteoporosis in older children and adults can be prevented from developing or can be cured if already present by ultraviolet irradiation of the skin. Since vitamin D administration also has these particular effects, it may be substituted for the light treatment.

Many claims and counterclaims have been made regarding the less specific effects of this form of irradiation on general nutrition. Exact experimental data on this aspect of the problem are almost entirely lacking, although many conservative pediatricians and physical therapists believe from empirical experience that recovery from mild subacute pyogenic infections, nutritional anemia and slow or stationary weight gain is accelerated by ultraviolet treatments twice or thrice weekly. Final proof of its value in the treatment or prevention of these conditions is still wanting.

The third use of ultraviolet irradiation among children grouped together in homes, hospitals or school rooms is that of sterilizing the air. Proof that irradiation of the air by ultraviolet lamps tends to reduce the spread of certain infectious diseases has been furnished by carefully conducted experiments in several cities. —The Journal of the American Medical Association, June 5, 1943, p. 409.

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Tonsil Adenoid Operation and Health of School Girls.—Paton analyzes the records of 909 girls admitted to a boarding school between 1930 and 1939. The girls are recruited from well to do fam-

ilies and are healthy on admission. The majority enter school at or about puberty. The data are extracted from the history and state of health on examination recorded at entry and the records of illness during the school years. Fifty-seven per cent of the girls had had their tonsils removed and 50 per cent had had their adenoids removed. Inquiry into the incidence of illness among 909 girls revealed that the operation group was no healthier than the control group on arrival at school. The operation group was less healthy than the control group while at school. This is shown by the number of school days lost through illness. The operation group suffered less from tonsillitis. The operation group suffered much more from respiratory infections and lost more days from bronchitis alone than they gained in respect of tonsillitis. When the small groups in whom a single operation was performed (tonsil operation 57 cases, adenoid operation 24 cases) are considered, certain deductions are warranted. Removal of the tonsils is the factor in the combined operation responsible for the reduction in tonsillitis and for the increase in respiratory infections. Adenoidectomy alone reduces the liability to respiratory infections, but in the combined operation group the removal of adenoids failed to counteract the increase in respiratory infections which resulted from the tonsillectomy. Removal of adenoids increases the liability to acute otorrhea. Recurrent attacks of otorrhea are seldom prevented and primary attacks of otorrhea are more frequent after the operation. These figures support the conclusion of Glover and Wilson, arrived at from a survey of more than fourteen thousand records, that a large proportion of the tonsil and adenoid operations now done on children are "unnecessary, entail some risk and give little or no return."—From Quarterly Jour. of Med., Oxford, Eng., April 1943, p. 119. Author, J. H. P. Paton. As abstracted in Jour. A. M. A., Sept. 4, 1943, p. 62.

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"Virus",—"Doctor Jones" says,—When I was a boy they'd known about bacteria for a good many years but they were just beginning to get wise to the relationship between bacteria and disease. But there were several diseases—smallpox, yellow fever, measles, chickenpox and so on—that they knew they were catching but they couldn't find any germ for 'em. So, for want of some better idea, they called this what-ever-it-was that spread the disease but they couldn't see it under a microscope—they said it was a "virus". That was something you sort of had to take on faith. It's no wonder they were kind of hazy about it all: in Memphis, Tennessee, not long before, they had 17,000 cases of

yellow fever and they fired off a cannon, so I read, in the hope it'd dispel the "miasm" that they figured was causing the epidemic.

Then they found out that a filter made out of clay and so on—the bacteria (these bugs that they could see under the microscope) they wouldn't go through it and yet the liquid that came through —the filtrate—it'd cause one of these diseases. So they knew this virus was there, even if they couldn't see it. But there was some question whether it was minute living organisms or something chemical. Then smallpox—they got so they could see some granular bodies they figured were the virus and in the laboratory they were able to keep some of these viruses alive by inoculating animals with 'em and using culture media that had living tissue in it. So the general conclusion was the viruses were living organisms. There's one fellow though, that was working on a virus disease of tobacco (tobacco mosaic)—in 1935, he got something in crystalline form from infected plants that'd cause the disease and he claimed it was a chemical and not a microorganism. That was confirmed by others, so it kind of got 'em guessing.

Influenza—back in the world-wide epidemic there in 1918, there was a bacillus a lot of 'em figured was the cause but that didn't pan out. Now it's well established that it's a virus that causes it. There's still a lot of puzzling things about it though. One interesting thing: around 1918 they discovered that hogs had a form of influenza and there was some question whether they didn't get it from man. That seems to be one more thing we have in common, the hogs and us. It kind of looks as if maybe our family trees needed spraying. Paul B. Brooks, M.D. From Health News (New York State Department of Health) July 19, 1943, page 122.

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NOTES

Spastic Children.—An initial endowment of $5,000 has been given to the University of Southern California, Los Angeles, by the Crippled Children's Society of Los Angeles County and the California State Society for Crippled Children to undertake scientific research to develop tests for measuring the intellectual and performance capacities of spastic children. This particular phase of the study is being undertaken for the first time and will be supported over a period of five years. Volunteer public and professional organizations, as well as individuals dealing with spastic children, will have access to the psychometric clinic, which is a unit of the psychology department at the University of Southern California.—Jour. A. M. A., Sept. 11, 1943, p. 102.

Septic Sore Throat and Scarlet Fever in a School,—Tapioca pudding which had been allowed to stand overnight without refrigeration is believed to have been the vehicle of infection in a recent outbreak of septic sore throat and scarlet fever involving over fifty students and faculty members of a New York upstate school.

Onsets of illness in fifty-five patients visited by state and local health officials occurred between April 9-13, inclusive. The cases were distributed about equally among the pupils, ranging in age from five to seventeen years, and included four adults—the principal, his secretary and two teachers. The symptoms, which varied in severity, included fever, inflamed throat, and swollen glands. In four instances, there was a scarlet fever rash.

The situation in one family was quite instructive; the two girls, age eleven and eight years, had had scarlet fever seven years before and developed septic sore throat but no rash. The boy, age five years, who had not had scarlet fever previously, developed a "taxtbook" case of scarlet fever.

Every one of the fifty-five cases had eaten the school luncheon regularly, while no illness was found among fourteen pupils who ate the noonday meal at home. With the exception of the four school employees, no cases of sore throat or scarlet fever were discovered among adult members of the many families visited. Of the numerous preschool children seen in these households, only two were ill with sore throat.

Milk seemed definitely excluded as a possible source of the outbreak, since the pasteurized product served in the school did not cause illness among consumers outside the school who used the same supply, and since hot cocoa was served instead of milk on the day on which infection apparently occurred.

Epidemiological data suggested tapioca pudding served at the school lunch on April 8 as the most likely vehicle of transmission of the illness. It was prepared by a woman cook on the afternoon of April 7 and allowed to stand unrefrigerated overnight. This woman had handled the pudding again at the time of serving on April 8. She reported ill with sore throat immediately after the luncheon that day and went home. She stated she had "felt poorly" during the previous day or two. Another of the lunchroom employees had had "quinsy sore throat" three weeks previously, had been absent from work a week and two days and had returned, with a doctor's certificate, April 5.

Samples of the pudding were not available for laboratory examination. Throat cultures from a number of the patients and from the lunchroom employees are being examined.

Strict isolation of all cases of sore throat was instituted by the local health officer. The importance of adequate refrigeration of food was emphasized and the lunchroom staff were instructed to stay at home in case of any infection or illness in order to prevent future outbreaks. No additional cases have been reported. — From Health News, New York State Department of Health, May 24, 1943.

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Safety Education a Century Ago,—N. L. Burnette, assistant secretary, Canadian Head Office of the Metropolitan Life Insurance Company, calls attention to what well may be one of the earliest references to an accident prevention association.

Mr. Burnette has in his possession a publication entitled, "The Family Oracle of Health, Medicine and Good Living Adapted to All Ranks of Society from the Palace to the Cottage," edited by A. F. Creell, M.D., F.R.S., and W. M. Wallace, Esq., assisted by a committee of scientific gentlemen, and published in London, England, in 1827.

It appears that in October 1789 there was founded in the county of Northampton, England, an association called the "Preservative Society." This body issued instructions resembling those given in present-day pamphlets on safety. Apparently most sudden deaths at the time mentioned were from drowning but cautions against other types of accident were published as follows:

"Stand not near a tree nor any leaden spout, iron gate or palisado in time of lightning.

Lay loaded guns in safe places and never imitate firing a gun in jest.

Never sleep near charcoal. If drowsy at any work where charcoal fires are used, take the fresh air.

Carefully rope trees before they are cut down that when they fall, they may do no injury.

Never leave stable or draft horses while in use by themselves.

Leave nothing poisonous open or accessible.

Be wary of children whether up or in bed and particularly near fire."

This last has a very modern note; so has another recommendation that when any accident happens, the common assistants are to do nothing but as instructed in the printed directions and only six persons are to be present at a time.

The sum of four guineas was to be distributed among the helpers if the injured person recovered, but only two guineas if the

patient died! The messenger who was sent off to get a physician or surgeon was to be recompensed at the rate of one shilling per mile. —From Health News, New York State Department of Health, June 14, 1943.

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"Alaska's Health."—There has come to the Editor's desk the first issue "Volume 1 No. 1, June 1943" of a very interesting eight-page publication entitled "Alaska's Health." This is issued by the Department of Health of Alaska cooperating with the United States Children's Bureau and the United States Public Health Service.

It sets forth the needs in public health work in Alaska on the basis of a unified and coordinated program as follows:

Trained full-time public health personnel to carry on local health service;

Greater emphasis in the tuberculosis program on the follow-up of contacts and less on tuberculin testing;

Legislation for a more modern Health Department organization with powers and duties clearly defined;

A division of Health Education with a well trained and experienced health educator as its director;

Studies to determine the areas where typhoid fever is endemic and its causes;

Improvement of reporting of births, deaths, and communicable diseases;

More frequent and more effective field consultation-advisory services to local communities;

More money for the Territorial Health Department from local sources.

Later issues will disclose what is being done to bring about this program which is based on a report rendered by Carl E. Buck, Dr. P. H., Field Director of the American Public Health Association, following a study of some time ago of Alaska's health needs.

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School Sanitation.—One of the first steps in maintaining a clean wholesome building is to remove all causes of insanitation. Soap and water, plus elbow grease, will remove most pungent odors and disfigurement from the walls and floors. Proper cleaning agents have their place but there is no one cure-all. All rubbish and trash should be removed from the building and destroyed. Dark corners and accumulated dirt should be cleaned up. Rubbish and dirt breed insects and are also a source of fire hazards. Not only is this true of the basement and unexcavated portion of the building but also of the attic. From the Bulletin to the Schools (The University of the State of New York), October 1942, page 74.

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REVIEWS

Health and Physical Fitness. *I. H. Goldberger, M.D.*, and *Grace T. Hallock.* Ginn & Co., Boston, 1943. Page 596. Price $1.92.

Part I of this text is devoted largely to the structure and function of various body parts and Part II deals with the nervous system.

Part III concerns itself with provisions and precautions for healthful living in home and community, including accident prevention, first aid, and household care of the sick.

Part IV presents suggestions as to choosing an occupation, occupational dangers, financial competence and other items. C. H. K.

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Man in Structure and Function. *Fritz Kalm, M.D.* Translated and edited by George Rosen, M.D. Alfred A. Knopf, New York, 1943. Two volumes, pages 742 plus index. Price $10 total.

This text, on the anatomy and physiology of man, is written largely for those who do not need the minute details necessary for physicians, and is a valuable addition to the popular literature in these fields.

The illustrations are remarkable and excellent. Being schematic, they are much more informative than the usual type of anatomical and physiological presentations.

For quick boiled-down information, both the pictures and the written descriptions present lively and interest catching material that cannot fail to hold the attention and stimulate the enthusiasm of the student.—C. H. Keene, M.D.

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As The Child Grows, *Helen Brenton Pryor, M.D.,* Silver Burdett Co., New York, 1943.

This text is designed largely to place before teachers a concept of the growth and development of children from birth through the adolescent age period.

Part One discusses briefly the individual differences existing in human beings, particularly in children, and makes it clear that knowledge of age, height and weight is not enough of a basis for judging the child's health or development. Also, it has chapters on Heredity and Environment, Embryology, Nutrition, Fatigue and Body Mechanics, and on Control of Disease.

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Part Two traces the Growth, and Motor and Mental Development at various stages from birth through adolescence.

Logically organized and interestingly written, this text contains a wealth of information which every educator might well read. C. H. Keene, M.D.

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"The Sight Saver," *by C. J. Gerling,* Harvest House, New York, pages 202, price $2.00.

This text is written as an informative aid to sight conservation.

The various topics discussed are arranged in alphabetical sequence, making quick reference possible.

It pays its attention to eye washes—most of them, in the slang sense, being just that; to eye exercises, again discriminating between the beneficial, the useless, and the harmful; the use of glasses; and to other practical topics.

This is a worthwhile quick reference work, valuable to laymen, and to some extent to the physician. C. H. Keene, M.D.